

SPECIFICATION

ELECTRICAL CONNECTOR WITH PROTECTIVE SPACER

BACKGROUND OF THE INVENTION

1. FIELD OF THE INVENTION

[0001] The present invention relates to an electrical connector mounted on a printed circuit board (PCB) for supplying power to a computer system.

2. DESCRIPTION OF THE RELATED ART

[0002] Referring to FIG. 4, a prior art electrical connector 2 electrically mounted on a PCB (not shown) for supplying power to a computer system (not shown) comprises an insulative housing 20 defining a plurality of channels 202 and a plurality of contacts 22 partially received in the housing 20. The contacts 20 are partially received in the housing 20 and extend out of the housing 20 via the corresponding channels 202. In order to electrically connecting to the PCB, each contact 22 defines a tail portion 220, which is out of the housing 20 and proximately perpendicular to the channels 202 for engaging with corresponding holes (not shown) of the PCB. Each tail portion 220 is long enough to ensure reliable connection between the contact 22 and the PCB. However, the length of the tail portion 220 of the contact 22 is too great that the tail portion 220 will be bended to an incorrect position not perpendicular to the channel 202 during the process of mounting the connector 2 onto the PCB by incorrect exterior force. The tail portion 220 of the contact 22 will be curved or even broken, and as a result, the contact 22 cannot

engage with the PCB correctly.

[0003] Hence, a new electrical connector is desired to overcome the above-described disadvantages.

SUMMARY OF THE INVENTION

[0004] An object of the present invention is to provide an electrical connector which has a spacer for protecting contacts from being damaged during the course of mounting the connector onto a PCB.

[0005] In order to achieve the aforementioned object, an electrical connector in accordance with a preferred embodiment of the present invention comprises an insulative housing defining a plurality of channels, a plurality of contacts received in the housing and a spacer engaged with the housing. The contacts are partially received in the housing and extend out of the housing via the corresponding channels. Each contact defines a tail portion, which is out of the housing and receives through the channel. The spacer comprises a base defining a pair of fastening arms and a pair of guiding blocks. The base of the spacer defines a plurality of island platforms thereon, each island platform defining a passageway therethrough. The tail portion of the contact electrically connects to the PCB via a corresponding passageway, which enhances the intension of the tail portion and prevents the contact from being damaged during the course of mounting the connector onto the PCB.

[0006] Other objects, advantages and novel features of the present invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings, in which:

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] FIG. 1 is an exploded, isometric view of an electrical connector in accordance with the preferred embodiment of the present invention;

[0008] FIG. 2 is an isometric view of a spacer for the electrical connector;

[0009] FIG. 3 is an isometric view of the electrical connector with a part cut off; and

[0010] FIG. 4 is an isometric view of a conventional electrical connector.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0011] Reference will now be made to the drawing figures to describe the present invention in detail.

[0012] Referring to FIGS. 1-2, an electrical connector 1 in accordance with the preferred embodiment of the present invention is used to supply power to a computer system (not shown). The electrical connector 1 comprises an insulative housing 10 defining a plurality of channels 102, a plurality of contacts 12 partially received in the housing 10, and a spacer 14 engaged with the housing 10. The housing 10 defines a pair of guiding slots 106, a pair of fastening slots 108, and a pair of hooking slots 110 perpendicularly communicating with the fastening slots 108. Each contact 12 partially received in the housing 10 protrudes out from the housing 10 via a corresponding channel 102, and comprises a distal tail portion 120

perpendicular to the channel 102. A plurality of dividers 101 are formed on a rear portion of the housing 10 to isolate the tail portion 120 of each individual contact 12.

[0013] Referring to FIGS. 2-3, the spacer 14 comprises a base 140, a pair of fastening arms 142 depending from opposite sides of the base 140, and a pair of guiding blocks 1404 extending from the opposite sides of the base 140. The base 140 comprises a plurality of island platforms 1402 extending away from a common surface 1401. Each island platform 1402 defines a passageway 1400 spanning through the entire base 140. The island platforms 142 defines a plurality of intertwined troughs (not labeled) formed among those island platforms 142 and in alignment with the corresponding dividers vertically. Each fastening arm 142 comprises a hook 1420 at a distal end thereof.

[0014] When the spacer 14 is mounted on the housing 10, the tail portions 120 of the contacts 12 are received through the corresponding passageways 1400, with the spacer 14 being pushed downward. At the same time, the guiding blocks 1404 slide in the guiding slots 106 and the fastening arms 142 slide in the fastening slots 108 until the hooks 1420 of the fastening arms 108 hook in the hooking slots 110. The spacer 14 effectively shortens deformable lengths of the tail portions 120 and enhances strengths of the tail portions 120 during mounting of the tail portions 120 to a PCB. In particular, the tail portions 120 resist bending or breakage when the connector 3 is mounted on the PCB with improper external force.

[0015] While the present invention has been described with reference to a specific embodiment, the description is illustrative of the invention and is not to be construed as limiting the invention. Various modifications can be made

to the preferred embodiment by those skilled in the art without departing from the true spirit and scope of the invention as defined by the appended claims.